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Transport studies of a superconductor- InAs/GaSb bilayer junction XIAOYAN SHI, Sandia National Laboratories, WENLONG YU, Z. JIANG, Georgia Institute of Technology, J.F. KLEM, W. PAN, Sandia National Laboratories — We fabricated a superconductor- semiconductor junction, by depositing a superconducting Ta film onto a band inverted InAs/GaSb bilayer. In this talk, we focus on electrical transport studies of this junction as a function of magnetic fields. At Zero magnetic field, the tunneling results show a zero bias conductance peak and this conductance peak survives in a field even up to 2 T. With further increasing magnetic field, the conductance peak eventually becomes a dip above 4 T. Finally, by tuning the front gate, we were able to measure the tunneling conductance when the InAs/GaSb bilayer is in the charge neutrality regime.

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